OPERATOR'S SAFETY AND SERVICE MANUAL



MK8 121

This manual covers the following serial numbers and higher for each model listed:

MK8-121.....1790001



RIDE ON TROWELS

MBW, Inc.

250 Hartford Rd • PO Box 440 Slinger, WI 53086-0440 Phone: (262) 644-5234 Fax: (262) 644-5169 Email: mbw@mbw.com Website: www.mbw.com

MBW (UK) Ltd.

Units 2 & 3 Cochrane Street Bolton BL3 6BN, England Phone: 01204 387784 Fax: 01204 387797

MBW France S.A.R.L

Z.A. d'Outreville 11 rue Jean Baptiste Néron, 60540 BORNEL, France Phone: 3 44 07 15 96 Fax: 3 44 07 41 28

L19342 / 02.07.A ©MBW, Inc. 2007 Printed in the USA

TABLE OF CONTENTS

Safety Information	1	Lifting	
Introduction	1	Storage	:
Safety Precautions		Changing Trowel Blades	
Safety Decals		Replacing The Battery	8
Curety Desails		Replacing The Floats	8
Specifications	3		
		Service	9
Operation	4	Torque Chart	!
Introduction	4	Parts Replacement Cycles and Tolerances	9
Before Starting & Operating	4	•	
Starting Engine		Replacement Parts	10
Operating		Main Assembly	1
Stopping Engine	5	Tank Assemblies	1
Hydraulic pressure regulation	5	Control Assembly	1
		Pump Assembly	1
Maintenance	6	Drive Assembly	1
Maintenance Schedule	6	Right Blade and Gearbox Assembly	10
Fluid Levels	6	Left Blade and Gearbox Assembly	1 [.]
Engine Maintenance	6	Engine Assembly, Briggs	18
Engine Speed	6	Frame Assembly	1
Cleaning	6		
Paduction Cear Oil	6	Warranty	20



WARNING



CALIFORNIA PROPOSITION 65 WARNING

Engine exhaust and some of its constituents are known in the state of California to cause cancer, birth defects, and other reproductive harm.

SAFETY INFORMATION

Introduction



This Safety Alert Symbol is used to call attention to items or operations which may be dangerous to those operating or working with this equipment. The symbol can be found

throughout this manual and on the unit. Please read these warnings and cautions, along with all decals, carefully before attempting to operate the unit. Make sure every individual who operates or works with this equipment is familiar with all safety precautions.



WARNING



GENERAL WARNING. Indicates information important to the proper operation of the equipment. Failure to observe may result in damage to the equipment and/or severe bodily injury or death.



CAUTION



GENERAL CAUTION. Indicates information important to the proper operation of the equipment. Failure to observe may result in damage to the equipment.

Safety Precautions



LETHAL EXHAUST GAS: An internal combustion engine discharges carbon monoxide, a poisonous, odorless, invisible gas. Death or serious illness may result if inhaled. Operate only in an area with proper ventilation. NEVER OPERATE IN A CONFINED AREA!



DANGEROUS FUELS: Use extreme caution when storing, handling and using fuels, as they are highly volatile and explosive in vapor state. Do not add fuel while engine is running. Stop and cool the engine before adding fuel. DO NOT SMOKE!



SAFETY GUARDS: It is the owner's responsibility to ensure that all guards and shields are in place and in working order.



IGNITION SYSTEMS: Breakerless, magneto, and battery ignition systems can cause severe electrical shocks. Avoid contacting these units or their wiring.



SAFE DRESS: Do not wear loose clothing, rings, wristwatches, etc. near machinery.



NOISE PROTECTION: Wear OSHA specified hearing protection devices.

EYE PROTECTION: Wear OSHA specified eye shields, safety glasses, and sweat bands.



FOOT PROTECTION: Wear OSHA specified steel-tipped safety shoes.



HEAD PROTECTION: Wear OSHA specified safety helmets.



DUST PROTECTION: Wear OSHA specified dust mask or respirator.

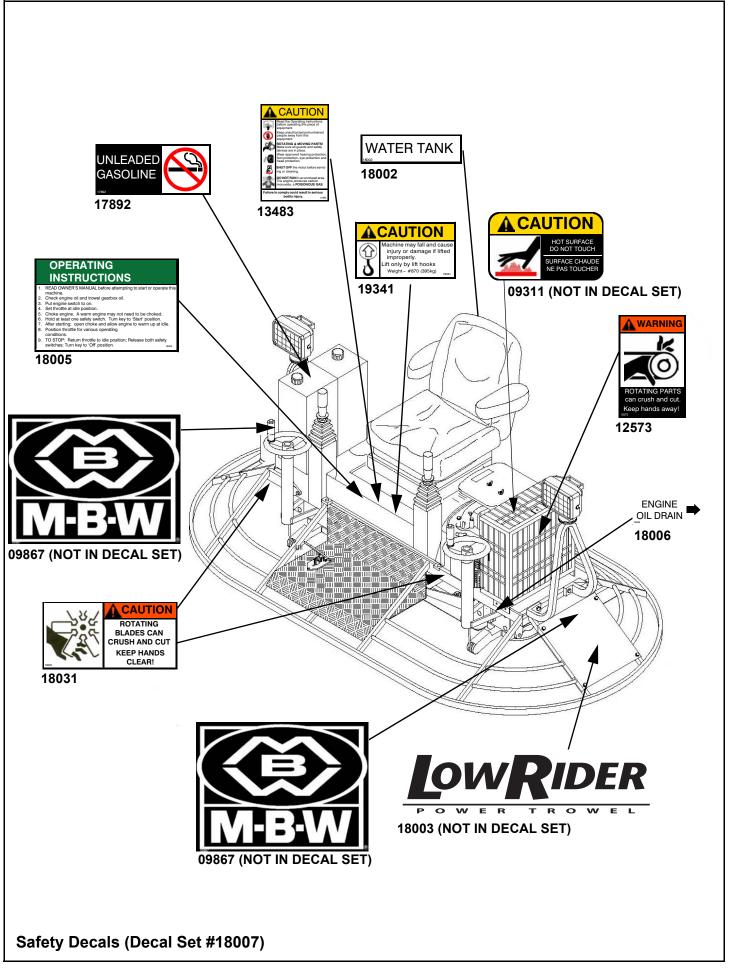


OPERATOR: Keep children and bystanders off and away from the equipment.

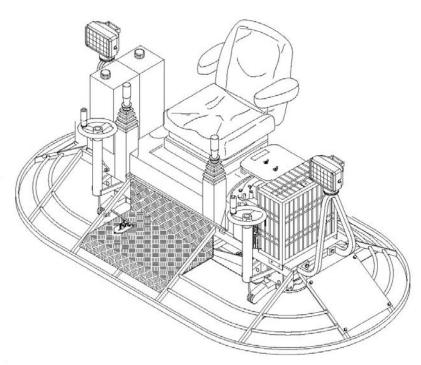
REFERENCES: For details on safety rules and regulations in the United States, contact your local Occupational Safety and Health Administration (OSHA) office. operated in other countries must be operated and serviced in accordance and compliance with any and all safety requirements of that country. The publication of these safety precautions is done for your information. MBW does not by the publication of these precautions, imply or in any way represent that these are the sum of all dangers present near MBW equipment. If you are operating MBW equipment, it is your responsibility to insure that such operation is in full accordance with all applicable safety requirements and codes. All requirements of the United States Federal Occupational Safety and Health Administration Act must be met when operated in areas that are under the jurisdiction of that United States Department.

Safety Decals

Carefully read and follow all safety decals. Keep them in good condition. If decals become damaged, replace as required. If repainting the unit, replace all decals. Decals are available from authorized MBW distributors. Order the decal set listed on the following page(s).



SPECIFICATIONS



	12135BH
Dimensions	2450x1205x1040mm
Weight	395kg
Motor	B&S 35hp
Max Engine RPM	3600RPM
Min / Max Blade RPM	70-170RPM
Rotor Diameter	47.2in (120mm)
Max Forward Speed	295ft/min (90 m/min)
Sound Level At Drivers Seat	92.3(db)
Trowel Path	100in(2540mm)

Specifications subject to change without notice

OPERATION

Introduction

MBW equipment is intended for use in very severe applications. They are powered by four cycle engines and are available in different sizes and a selection of engines.

This parts manual contains only standard parts. Variations of these parts as well as other special parts are not included. Contact your local MBW distributor for assistance in identifying parts not included in this manual.

Before Starting & Operating

- REMEMBER! It is the owner's responsibility to communicate information on the safe use and proper operation of this unit to the operators.
- Review ALL of the Safety Precautions listed on page 1 of this manual.
- Familiarize yourself with the operation of the machine and confirm that all controls function properly.
- Know how to STOP the machine in case of an emergency.
- Make sure hands, feet, and clothing are at a safe distance from any moving parts.
- OIL LEVEL Check the oil level in the engine. For more information see "Lubrication" under the respective engine's "Owners Manual" or the Maintenance section of this manual.
- AIR CLEANER Check to ensure element is in good condition and properly installed.
- FUEL SUPPLY The engines on MBW equipment require an automotive grade of clean, fresh, unleaded gasoline.
- FUEL FILTER If clogged or damaged, replace.
- Make sure the machine is on a flat surface with a working area of at least 3,000 square feet, and that there is a sufficient area around the machine. (at least 6 ft.)
- See that the blade is inclined by at least 1/2" in order to have better control over the float machine when starting.
- · Adjust seat if necessary.
- Make sure the two drive control levers are vertical and adjust if necessary.

Starting Engine

- 1. Close the choke. Choking may not be necessary on warm engines.
- 2. Leave accelerator pedal at idle.
- 3. Hold one emergency stop lever closed and turn the start key.
- 4. Open the choke once engine is warm.

Operating



CAUTION



To avoid premature clutch wear it is necessary to accelerate quickly upon start up then back the throttle off to the desired speed after the clutch is fully engaged.

To drive the machine in the desired direction, there are two control levers. Move the controls slowly and smoothly. To stop the float machine return the control levers to the rest position. The control lever positions and the relevant movements are described on page 5 of this manual.

Preparing the surface:

Use a mechanical vibrating float or manual float to level the floor surface in order to obtain a well-compacted concrete footing and thus prepare the ideal surface for floating and finishing. The float machine does not improve flatness of a badly floated or uneven floor.

Floating phase:

The floor is ready for the first pass when the imprint of the shoe heel sinks into the concrete by about 1/8" when walking on it.

On average about 2700-3200 square feet of surface are floated in 10 minutes. Speed varies with conditions.

When the concrete is still fresh, take care not to work continuously on the same spot since, due to the weight of the float machine, you may create an uneven floor surface.

During the floating phase the floats must not chatter on the surface; this might be caused by dirt between the blades and the floats.

Finishing phase:

When floating has been completed, detach the floats from the blades and clean the cement that has collected during the floating phase off the blades, the spider and the protection rim. Turn the blade-lifting knob clockwise until the blades are inclined by about 1/2" for the first pass; for the subsequent smoothing operations continue increasing the blade inclination until obtaining the desired finish.

The time between one pass and the next is determined by the temperature and by the amount of water in the concrete. If the concrete has hardened too quickly in some areas, it can be moistened by spraying a small amount of water using the button located on the left control bar in order to obtain the degree of finish desired.

Stopping Engine

- 1. Release the accelerator pedal to idle and turn off the key.
- 2. Close the fuel valve and remove the start key from the engine.

Hydraulic pressure regulation

The hydraulic operating pressure of the MK8-121 controls the sensitivity of the controls and may vary between 10 and 20 bar (145 - 290 PSI). The regulator and gauge is located behind the seat.

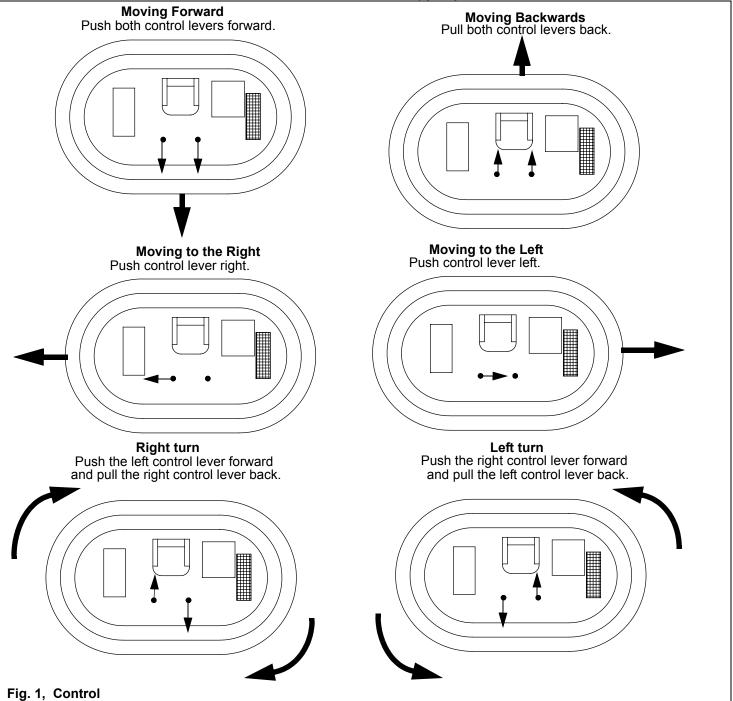
MARNING A

Always stop the engine before:

Adding fuel.

Leaving the equipment unattended for any amount of time.

Before making any repairs or adjustments to the machine.



MAINTENANCE



WARNING



Always follow the stopping procedure before servicing or lubricating the unit.

After servicing the unit, replace and fasten all guards, shields, and covers to their original positions before resuming operation.



CAUTION



Always verify fluid levels and check for leaks after changing fluids.

Do not drain oil onto ground, into open streams, or down sewage drains.

Maintenance Schedule

SYSTEM	MAINTENANCE	DAILY	WEEKLY	EVERY 100 HOURS	YEARLY
	Clean machine thoroughly	Х			
Engine	Refer to engine operator/owner manual	Х			
	Clean air filter				Х
Drive gear	Check wear and tensioning of belts		Х		
	Grease drive shafts		Х		
	Check reduction gear oil			Х	
	Change gear oil				Х
Battery	Check charge		Х		
	Check water level			Х	
	Clean posts			Х	
Hardware	Check and tighten as needed	Х			
	Check guard and blade hardware	Х			

^{1.} Check all hardware after the first 5 hours of use, then follow the maintenance schedule.

Fluid Levels

SYSTEM	FLUID VOLUME	RECOMMENDED OIL	
Gearbox	52oz	Cylinder/Gear Oil 460	
Engine	Refer to engine operator/owner manual		

Engine Maintenance

Refer to the engine owner's manual for maintenance intervals and procedures.

Engine Speed

The engine speed is factory preset according to the speeds listed in the Specifications section. Do not tamper with the governor settings. The governor establishes safe operating limits that must not be exceeded.

Cleaning

Clean the float machine at the end of each working day to prevent the cement from hardening on the machine. Wash the dirty parts with a brush and water. Wet the parts exposed to cement with "stripping" oil (never fuel oil). Do not oil the rubber moving parts (belts, etc.).

Reduction Gear Oil

Checking the Oil

Make sure machine is off.

- 2. Locate the sight gage on the outward side of the gearboxes.
- Oil level should be centered in oil sight gage.

Replacing the Oil

- 1. Lift the blade guard and secure it out of the way.
- 2. Remove the drain plug, located under the sight gage, and drain oil.
- 3. Replace drain plug.
- 4. Remove filler plug, located above sight gage, and fill until the sight gage is half full. Refer to Fluid levels on page 6 for type and quantity.
- 5. Replace filler plug.
- 6. Lower and secure the guard back to working position.

Lifting



WARNING



Never leave the floats attached to the float machine when lifting it more than 3ft. off the ground since it could detach and cause damage to people and things

To lift the machine from one level to another use a hoisting crane or lift truck of suitable capacity. Weight can be found in Specifications, page 3.

To transport the machine on a truck place the blades in horizontal position using the control knobs; transporting the float machine with the blades inclined may damage the blade tilt system.

Storage



WARNING



Never store the machine with fuel in the tank in places where the fuel vapors might come into contact with flames and/or sparks

If you know that the machine will not be used for more than one month, drain the fuel from the tank in order to prevent the formation of rubbery deposits, and disconnect the battery.

If storing the machine in places where the temperature might drop to below freezing drain the water tank.

Changing Trowel Blades



WARNING



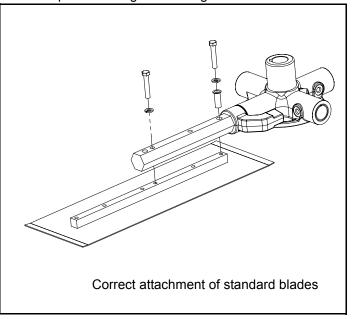
Trowel blade edges may be sharp when they are worn. Wear protective gloves when handling the blades.

Always check the state of wear of the blades and if they are damaged or bent, replace them. They must all be replaced at the same time.

- 1. Clean the machine.
- 2. Open the guard by unscrewing the two fixing bolts and hook the guard to the chain .
- 3. Slightly lift the float machine off the ground (about 4").
- 4. Remove the blades by removing the bolts through the arm.

To replace the metric blades with standard you will need to use a bushing kit.

- 5. Use one bushing per blade in hole closest to the spider.
- 6. Mount the new blades fixing a 5/16" x 1 3/4" bolt in the hole with the bushing and the smallest two of the holes.
- 7. When the blades have been mounted, lower the trowel to the ground.
- 8. Reposition the guard and tighten the bolts.



Replacing The Battery



WARNING



Handle the battery with particular care since it contains acid

- Remove the battery cover by unhooking the two hooks.
- 2. Remove the negative cable first.
- 3. Remove the battery and replace it with one with the same characteristics (45 Ah)

Replacing The Floats



CAUTION



Be careful when installing the floats: one rotor turns clockwise and the other counterclockwise, therefore you need to check that the various components have been properly arranged.

- Before mounting the floats, check that the blades are clean. The blades must be placed in horizontal position using the pitch control.
- 2. Slightly lift the float machine off the ground (about 4").
- 3. Mount the floats on the blades checking the correct direction of rotation.
- 4. When the floats have been mounted, reposition the float machine on the ground.

SERVICE

Assembly and disassembly should be performed by a service technician who has been factory trained on MBW equipment. The unit should be clean and free of debris. Pressure washing before disassembly is recommended.

- Prior to assembly, wash all parts in a suitable cleaner or solvent.
- Check moving parts for wear and failure. Refer to the Replacement section in this manual for tolerance and replacement cycles.
- All shafts and housings should be oiled prior to pressing bearings. Also, ensure that the bearings are pressed square and are seated properly.
- All bearings should be replaced when rebuilding any exciter or gearbox.
- All gaskets and seals should be replaced after any disassembly.

Torque Chart

SIZE	GRADE 2	GRADE 5	GRADE 8
1/4-20	49 in•lbs	76 in•lbs	9 ft•lbs
1/4-28	56 in•lbs	87 in∙lbs	10 ft•lbs
5/16-18	8 ft•lbs	13 ft∙lbs	18 ft•lbs
5/16-24	9 ft•lbs	14 ft•lbs	20 ft•lbs
3/8-16	15 ft•lbs	23 ft·lbs	33 ft•lbs
3/8-24	17 ft•lbs	26 ft•lbs	37 ft•lbs
7/16-14	24 ft·lbs	37 ft•lbs	52 ft•lbs
7/16-20	27 ft·lbs	41 ft·lbs	58 ft•lbs
1/2-13	37 ft•lbs	57 ft•lbs	80 ft•lbs
1/2-20	41 ft·lbs	64 ft∙lbs	90 ft•lbs
9/16-12	53 ft·lbs	82 ft·lbs	115 ft•lbs
5/8-11	73 ft•lbs	112 ft•lbs	159 ft•lbs
5/8-18	83 ft•lbs	112 ft•lbs	180 ft•lbs
3/4-16	144 ft•lbs	200 ft•lbs	315 ft•lbs
1-8	188 ft•lbs	483 ft•lbs	682 ft•lbs
1-14	210 ft•lbs	541 ft•lbs	764 ft•lbs
1-1/2-6	652 ft•lbs	1462 ft•lbs	2371 ft•lbs
M 6	3 ft•lbs	4 ft∙lbs	7 ft•lbs
M 8	6 ft•lbs	10 ft•lbs	18 ft•lbs
M 10	10 ft·lbs	20 ft•lbs	30 ft•lbs
CONVERSIONS			
in•lbs x 0.083 = ft•lbs			
ft-lbs x 12 = in-lbs			
ft•lbs x 0.1383 = kg•m			
ft•lbs x 1.3558 = N•m			

Parts Replacement Cycles and Tolerances

Bearings	Replace anytime a bearing is rough, binding, discolored or removed from housing or shaft.
Engine Components	Refer to your engine manufacturer's Owner's Manual.
Hardware	Replace any worn or damaged hardware as needed. Replacement hardware should be grade 5 and zinc plated unless otherwise specified.
Safety Decals	Replace if they become damaged or illegible.
Seals & Gaskets	Replace if a leak is detected and at every overhaul or teardown.
V-Belts	Replace if cracked, torn, or stretched to the point the belt won't tension properly.

REPLACEMENT PARTS

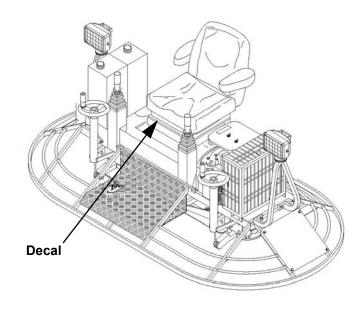
The warranty is stated in this book on page 20. Failure to return the Warranty Registration Card renders the warranty null and void.

MBW has established a network of reputable distributors/ dealers with trained mechanics and full facilities for maintenance and rebuilding, and to carry an adequate parts stock in all areas of the country. Their sales engineers are available for professional consultation. If you cannot locate an MBW distributor in your area, contact MBW or one of our Sales Branches listed below.

When ordering replacement parts, be sure to have the following information available:

- Model and Serial Number of machine when ordering MBW parts
- Model and Serial Number of engine when ordering engine parts
- · Part Number, Description, and Quantity
- Company Name, Address, Zip Code, and Purchase Order Number
- · Preferred method of shipping

REMEMBER - You own the best! If repairs are needed, use only MBW parts purchased from authorized MBW distributors.



The unit's serial number can be found in the following locations:

Decal on the seat post

Write Model Number here	
Write Serial Number here	

Contact Information

MBW, Inc.

250 Hartford Rd • PO Box 440 Slinger, WI 53086-0440 Phone: (262) 644-5234 Fax: (262) 644-5169 Email: mbw@mbw.com

Website: www.mbw.com

MBW (UK) Ltd.

Units 2 & 3 Cochrane Street Bolton BL3 6BN, England Phone: 01204 387784 Fax: 01204 387797

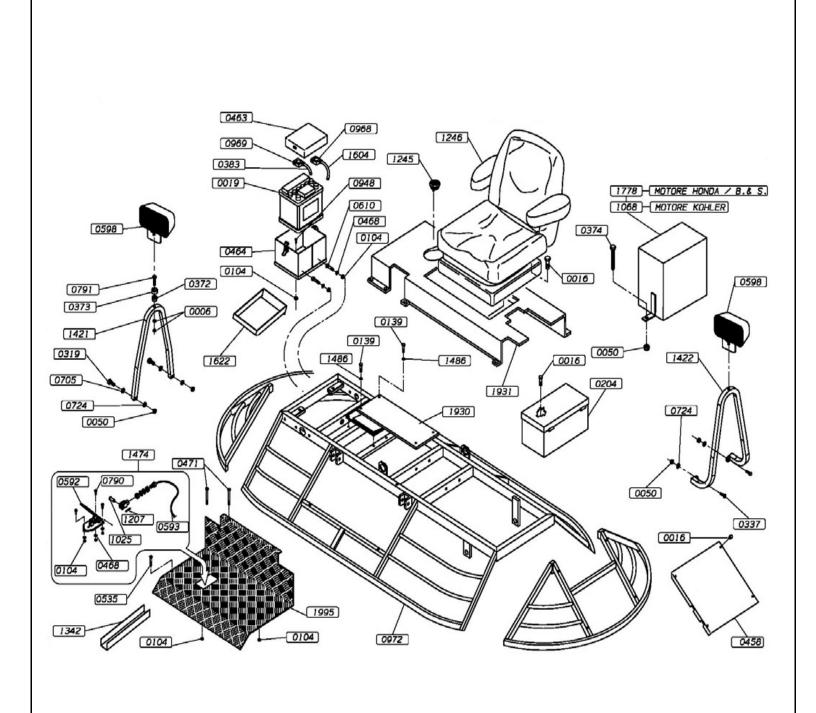
Email: mbwuk@btinternet.com

MBW France S.A.R.L.

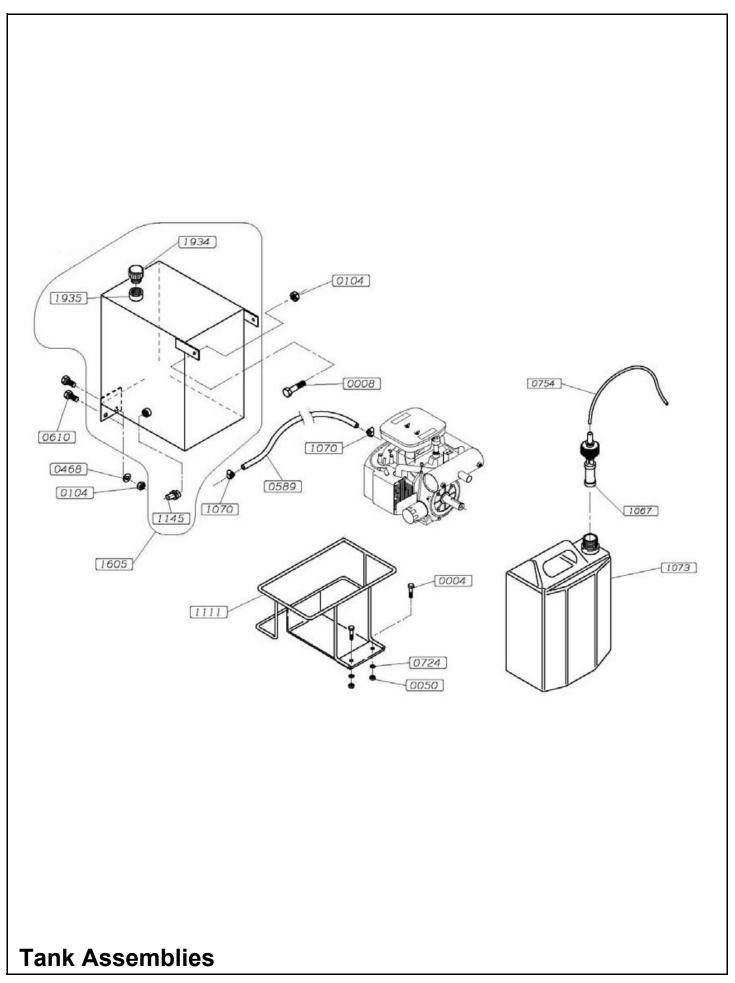
Z.A. d'Outerville 11 rue Jean Baptiste Néron, 60540 BORNEL

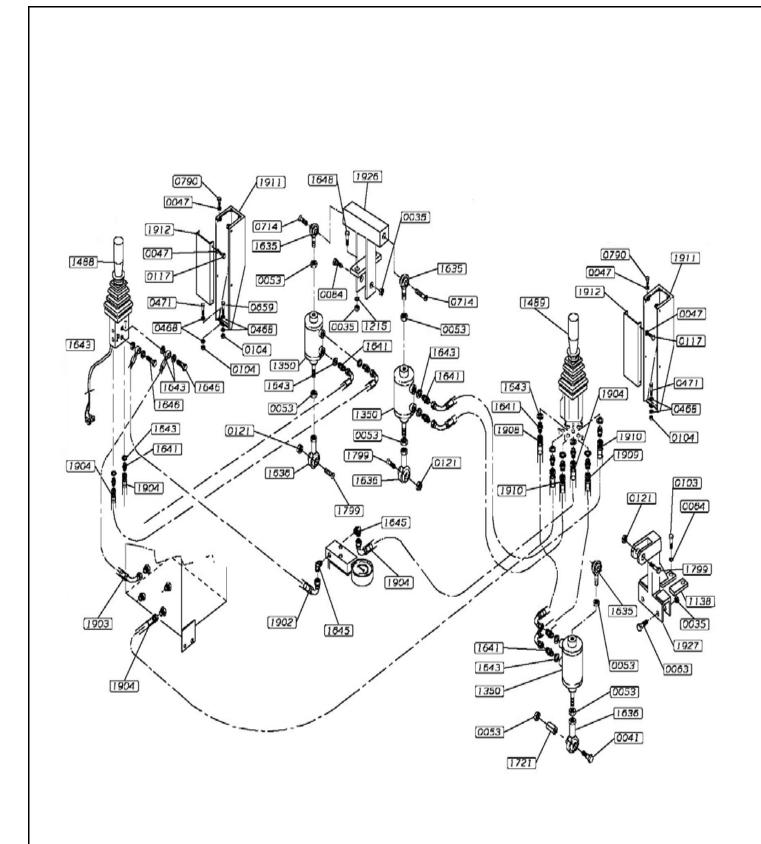
France

Email: mbwfrance@free.fr

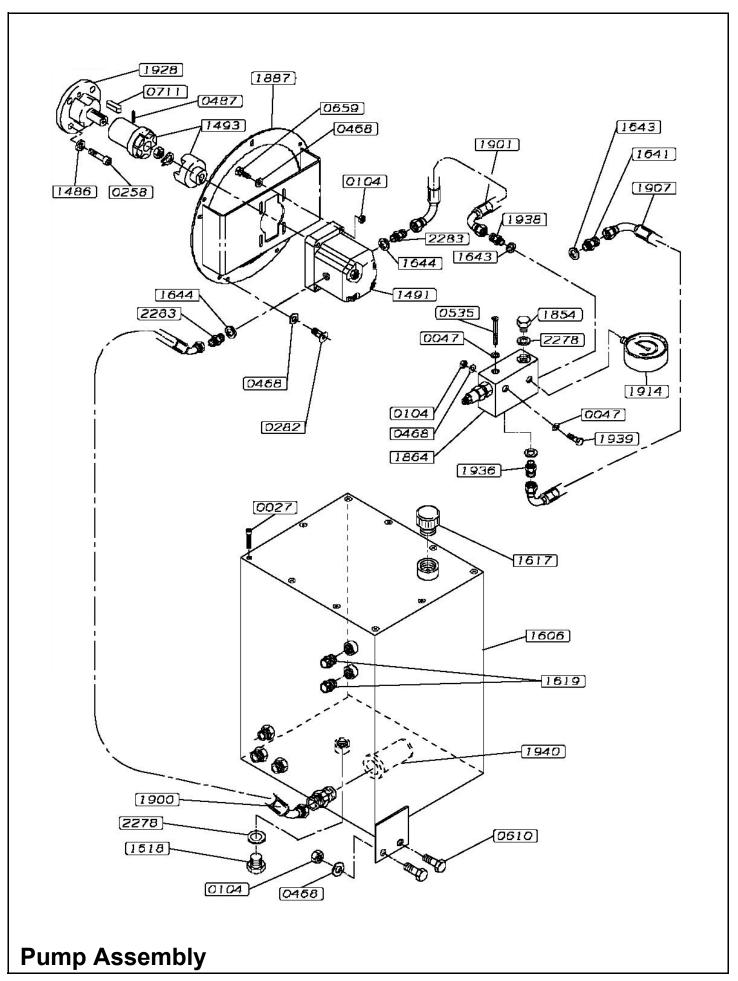


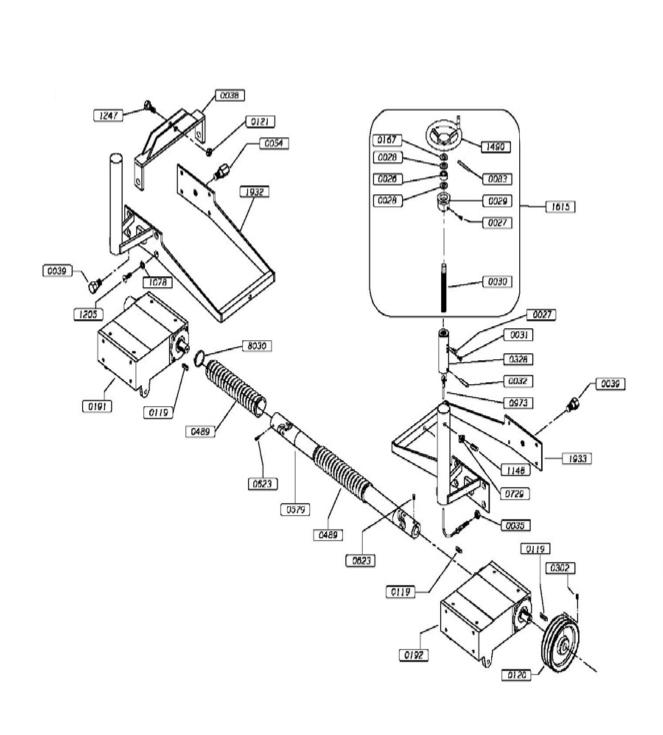
Main Assembly



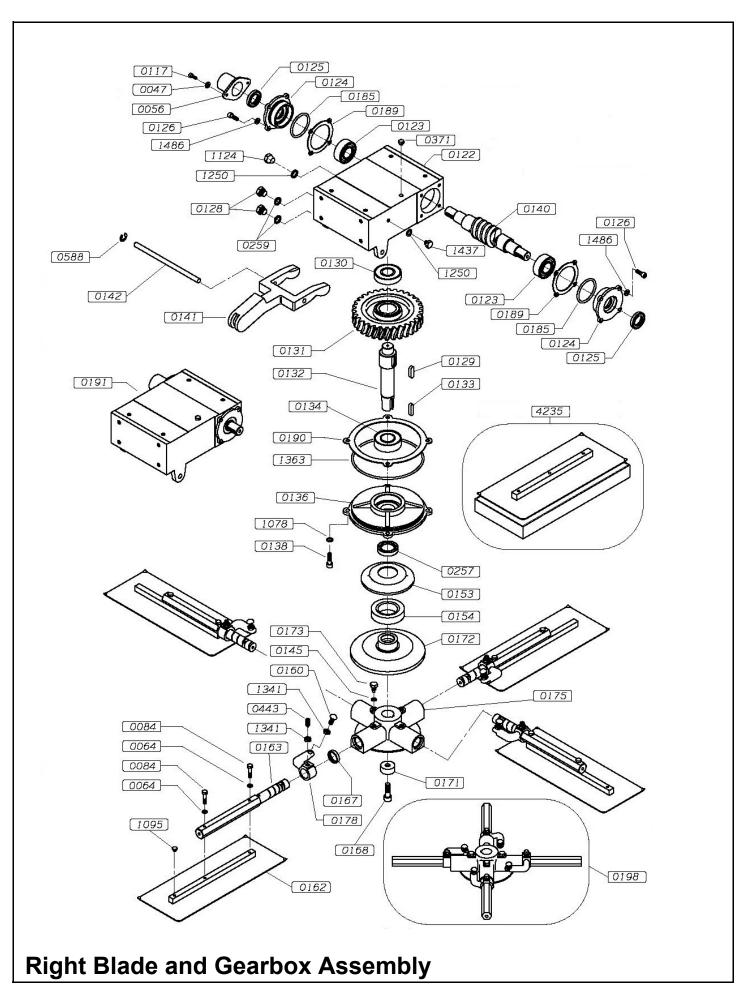


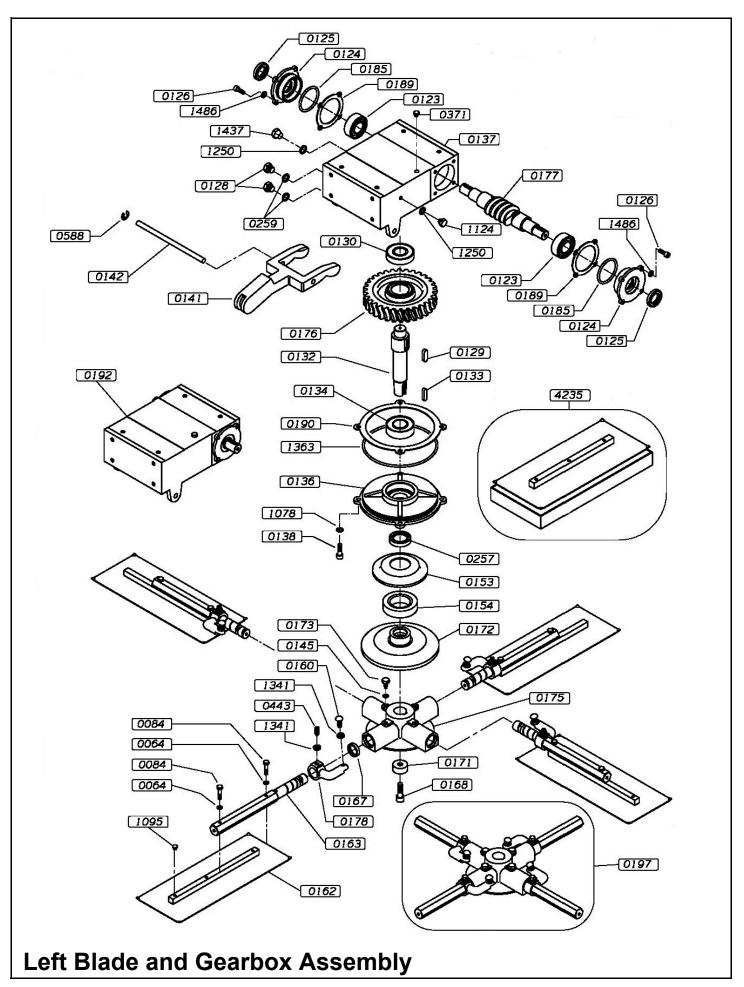
Control Assembly

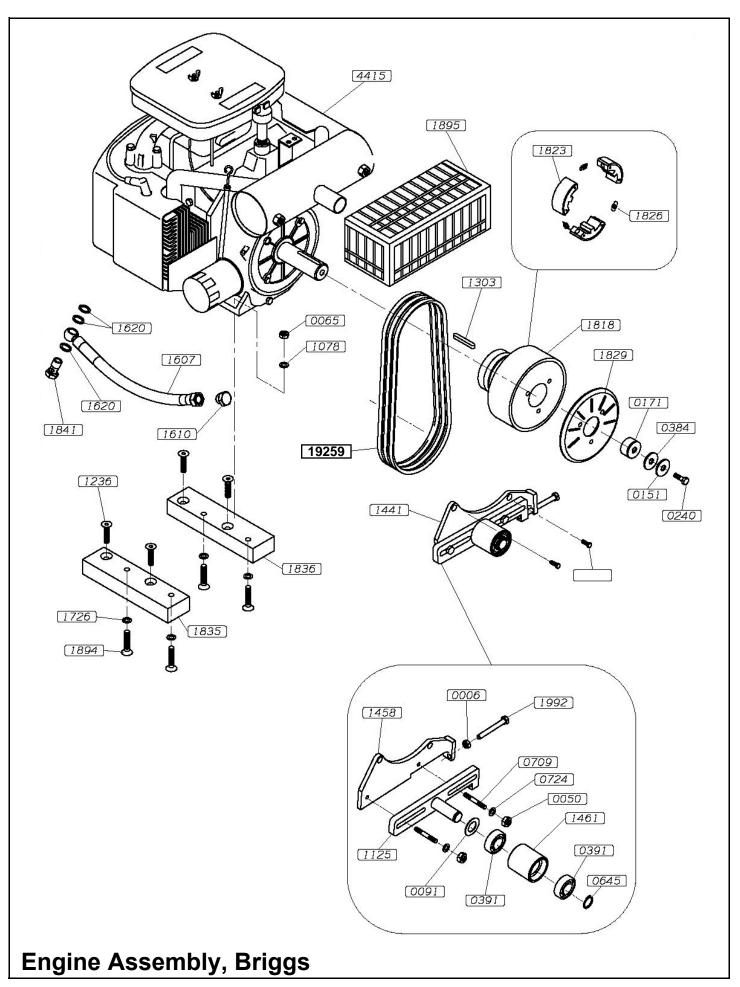


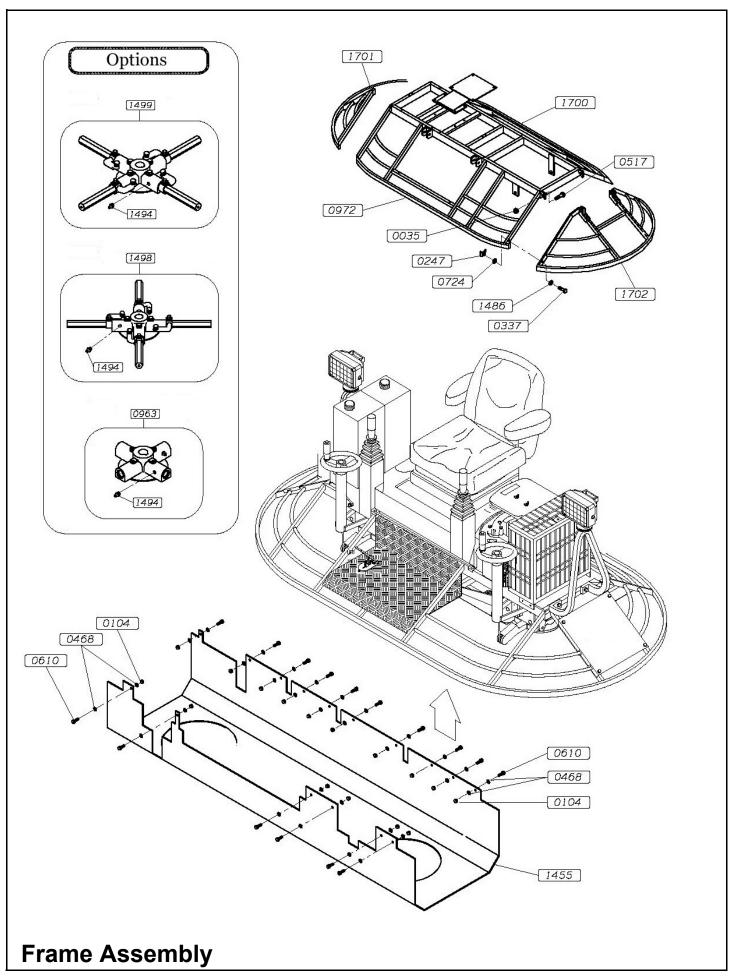


Drive Assembly









WARRANTY

WHAT DOES THIS WARRANTY COVER? MBW, Incorporated (MBW) warrants each New Machine against defects in material and workmanship for a period of twelve (12) months. "New Machine" means a machine shipped directly from MBW or authorized MBW dealer to the end user. This warranty commences on the first day the machine is sold, assigned to a rental fleet, or otherwise put to first use.

MBW warrants each Demonstration Machine against defects in material and workmanship for a period of six (6) months. "Demonstration Machine" means a machine used by MBW or its agents for promotional purposes. This warranty commences on the first day the machine is sold, assigned to a rental fleet, or otherwise put to first use.

This warranty covers the labor cost for replacement or repair of parts, components, or equipment on New Machines or Demonstration Machines, and MBW shall pay labor costs at MBW's prevailing rate to affect the warranted repair or replacement. MBW reserves the right to adjust labor claims on a claim-by-claim basis.

This warranty covers the shipping cost of replacement parts, components, or equipment via common ground carriers from MBW to an authorized MBW dealer. Air freight is considered only in cases where ground transportation is not practical.

MAY THIS WARRANTY BE TRANSFERRED? This warranty is non-transferable and only applies to the original end user of a new machine or demonstration machine.

WHAT DOES THIS WARRANTY NOT COVER?

- 1.This warranty does not cover any Used Equipment. "Used Equipment" means any MBW machine or equipment that is not a New Machine or a Demonstration Machine. All Used Equipment is sold **AS IS/WHERE IS WITH ALL FAULTS.**
- 2. This warranty does not cover any New Machine, Demonstration Machine, or their equipment, parts, or components altered or modified in any way without MBW's prior written consent. This warranty does not cover the use of parts not specifically approved by MBW for use on MBW products. This warranty does not cover misuse, neglect, shipping damage, accidents, acts of God, the operation of any New Machine or Demonstration Machine in any way other than recommended by MBW in accordance with its specifications, or any other circumstances beyond MBW's control. This warranty does not cover any New Machine or Demonstration Machine repaired by anyone other than MBW factory branches or authorized MBW distributors.
- 3.This warranty does not cover, and MBW affirmatively disclaims, liability for any damage or injury resulting directly or indirectly from design, materials, or operation of a New Machine or Demonstration Machine or any other MBW product. MBW's liability with respect to any breach of warranty shall be limited to the provisions of this document and in no event shall exceed an amount equal to the purchase price of the New Machine or Demonstration Machine purchased from MBW.
- 4. This warranty does not cover engines, motors, and other assemblies or components produced by other manufacturers and used on a New Machine or Demonstration Machine, as said engines, motors, and other assemblies or components may have warranties provided by the manufacturer thereof. This warranty does not apply to consumable items, such as v-belts, filters, trowel and screed blades, seals, shock mounts,

batteries, and the like, all of which are sold AS IS/WHERE IS WITH ALL FAULTS.

- 5. This warranty does not cover the cost of transportation and other expenses which may be connected with warranty service but not specifically mentioned herein.
- 6.This warranty does not cover any updates to any New Machine, Demonstration Machine, or any other MBW product. MBW reserves the right to improve or make product changes without incurring any obligation to update, refit, or install the same on New Machines or Demonstration Machines previously sold.

WHAT MUST YOU DO TO OBTAIN WARRANTY COVERAGE? Each New Machine or Demonstration Machine is accompanied by a Warranty Registration Card. You must sign, date, and return the Warranty Registration Card to the place of origin of the New Machine or Demonstration Machine, either to MBW, Inc. at P.O. Box 440, Slinger, Wisconsin 53086, MBW (UK), Ltd. at Units 2 & 3 Cochrane Street, Bolton BL3 6BN, United Kingdom or MBW FRANCE SARL at ZA D'Outreville, 5 Rue Jean Baptiste Neron, Bornel 60540 France, within ten (10) days after purchase, assignment to a rental fleet, or first use. This signed warranty card is the buyer's affirmation that he has read, understood, and accepted the warranty at the time of purchase. Failure to return the warranty card as specified herein renders the warranty null and void. In order to receive warranty coverage consideration, warranty claims must be submitted within thirty (30) days after the New Machine or Demonstration Machine fails. Warranty claims must be submitted to MBW, Inc., MBW (UK), Ltd. or MBW FRANCE SARL, and written authorization for the return of merchandise or parts under the warranty must be obtained before shipment to MBW.

WHAT WILL MBW DO? MBW's obligation under this warranty is limited to the replacement or repair of parts for a New Machine or Demonstration Machine at MBW factory branches or at authorized MBW distributors, and such replacement or repair is the exclusive remedy provided hereunder. Labor must be performed at an authorized MBW distributor. MBW reserves the right to inspect and render a final decision on each warranty case, and MBW's repair or replacement is solely within the discretion of MBW.

IT IS EXPRESSLY AGREED THAT THIS SHALL BE THE SOLE AND EXCLUSIVE REMEDY UNDER THIS WARRANTY. UNDER NO CIRCUMSTANCES SHALL MBW BE LIABLE FOR ANY COSTS, LOSS, EXPENSE, DAMAGES, SPECIAL DAMAGES, INCIDENTAL DAMAGES, OR PUNITIVE DAMAGES ARISING DIRECTLY OR INDIRECTLY FROM THE USE OF THE NEW MACHINE OR DEMONSTRATION MACHINE WHETHER BASED UPON WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR ANY OTHER LEGAL THEORY.

THE FOREGOING WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR USE, AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL OTHER OBLIGATIONS OR LIABILITY ON MBW'S PART. MBW NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME ON BEHALF OF MBW ANY OTHER LIABILITY OR WARRANTY IN CONNECTION WITH THE SALE OR SERVICE OF ANY NEW MACHINE, DEMONSTRATION MACHINE, OR ANY OTHER MBW PRODUCT.